

REMARKS

At the time of the Office Action dated September 20, 2005, claims 2-5, 7-9, 10, 12-14 and 16-18 were pending in this application. In this Amendment, claims 2 and 12 have been amended, and claims 4, 7-10, 13 and 16-18 canceled. Care has been exercised to avoid introduction of new matter. Specifically, claim 2 has been amended based on claims 4 and 7, and claim 12 has been amended based on claims 13 and 16. Currently, claims 2, 3, 5, 12 and 14 are active in this application.

Claims 2-5, 7-10, 12-14 and 16-18 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Iwano in view of Takeyari et al.

In the statement of the rejection, the Examiner asserted that the applied combination of Iwano and Takeyari et al. teaches the claimed invention.

In response, Applicant submits that the applied combination does not teach an optical transmitter including all the limitations recited in independent claims 2 and 12, as amended. Specifically, Applicant stresses that the applied combination does not teach, among other things, an optical amplifier including an erbium-doped optical fiber, and a modulation depth control system for controlling an amplitude modulation depth of laser light, as recited in those claims.

Iwano discloses a system for broadening a spectral line width by superimposing a directly frequency-modulation signal on a bias current to produce a driving signal which is applied to semiconductor laser 201 in order to suppress stimulated Brillouin scattering. Variable-gain amplifier 205 is used to superimpose the directly frequency-modulation signal to the bias current. This variable-gain amplifier 205 is not Er-doped fiber amplifier EDFA. Iwano discloses EDFA 102, but does not teach controlling the modulation depth of laser light from EDFA 102.

The Examiner asserted that Iwano teaches control of the modulation depth by controlling the bias current of the laser. However, Iwano does not teach control of the modulation depth of laser light from the optical amplifier, as claimed. Iwano discloses that constant output controller 203 keeps laser light from semiconductor laser 201 constant by controlling the bias current supplied to laser 201 while monitoring laser light from laser 201(column 3, lines 56-59). In other words, Iwano teaches an automatic level control circuit for laser 201. Since, for example, it can be considered that the modulation depth is related to a relative modulation amplitude, keeping laser light from laser 201 constant does not teach controlling the modulation depth of laser light from the optical amplifier. The Examiner did not provide any technological support as to why keeping laser light from laser 201 constant controls the modulation depth of laser light from the optical amplifier to be in a certain range as claimed.

In contrast, the claimed modulation depth control system controls the modulation depth of laser light from the optical amplifier that is modulated by modulation light source. It is apparent that Iwano is silent on such modulation depth control system, recited in claims 2 and 12.

Further, Takeyari et al., a secondary reference, does not teach erbium-doped optical fiber amplifier (EDFA). Although Equalizing amplifier 3 equalization-amplifies signals from receiver 2, the amplifier is not the EDFA. Regarding semiconductor laser 9, Takeyari et al. teaches that the amplitude modulation is negligibly small (see column 1, lines 54-56). Accordingly, Takeyari's optical regenerator can be implemented without the EDFA.

Moreover, the Examiner admitted that Iwano does not teach the claimed external modulator for amplitude-modulating laser light. Then, the Examiner asserted that Takeyari et al.

teaches the claimed external modulator, and thus, concluded that it would have been obvious to modify Iwano's external modulator 202 based on the teachings of Takeyari et al.

However, Applicant believes that there is no motivation to modify Iwano's modulator based on Takeyari et al. because Iwano's teaching is the automatic level control for laser which is irrelevant to the teachings of Takeyari et al.

Based upon the foregoing, Applicant submits that the applied combination of Iwano and Takeyari et al. does not teach an optical transmitter including all the limitations recited in independent claims 2 and 12, as amended. Dependent claims 3, 5 and 14 are also patentably distinguishable over those references at least because the claims respectively include all the limitations recited in independent claims 2 and 12. It is noted that the rejection of claims 4, 7-10, 13 and 16-18 has been rendered moot by cancellation of those claims. Applicant, therefore, respectfully solicits withdrawal of the rejection of the claims under 35 U.S.C. §103, and favorable consideration thereof.

Conclusion

It should, therefore, be apparent that the imposed rejections have been overcome and that all pending claims are in condition for immediate allowance. Favorable consideration is, therefore, respectfully solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper,

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including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read "Tomoki Tanida", written over the printed name and firm name.

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